Claims

1. A computerized method of determining when a change has occurred in an area-of-interest included in an image region comprising steps of:

initializing a background image region of at least a portion first frame;

comparing a first image region from a second frame to the background image region to classify pixels as foreground pixels or background pixels;

classifying foreground pixels based on predetermined characteristics; and

updating the background image region to include at least one foreground pixel that does not embody the predetermined characteristics.

2. The method of claim 1, further comprising a step of recording when the background image region was updated.

3. The method of claim 2, wherein the step of recording includes saving in a database the location of the second frame.

4. The method of claim 2, further comprising a step of searching the recorded video to determine when the background image was updated.

5. The method of claim 4, wherein the step of searching includes a step of determining whether all areas-of-interest have been processed.

6. The method of claim 4, wherein the step of updating the background includes incorporating the at least one pixel into the background and, wherein, the step of searching includes a step of determining the number pixels that were incorporated into the background in the step of updating the background that are within the area-or-interest.

7. The method of claim 6, further comprising a step of comparing the number pixels that were incorporated into the background in the step of updating the background that are within the area-or-interest with a threshold to determine if the threshold is exceed.

8. The method of claim 7, further comprising a step of returning a positive search result if the threshold is exceeded.

9. The method of claim 7, further comprising a step of backtracking to a frame where the pixels that were incorporated into the background were first classified as foreground pixels.

10. The method of claim 1, wherein the step of classifying includes a step of classifying the foreground pixels based on a static property.

11. The method of claim 10, wherein the static property is at least one of color, size, texture, or shape.

12. The method of claim 1, wherein the step of classifying includes a step of classifying the foreground pixels based on a dynamic property.

13. The method of claim 12, wherein the dynamic property is at least one of velocity, acceleration, change in size, change in area, change in color, or lack of motion.

14. The method of claim 1, wherein the step of updating the background image includes a step of incorporating the at least one foreground pixel that does not embody the predetermined characteristics into the background image.

15. The method of claim 14, wherein the step of incorporating includes overwriting the at least one foreground pixel onto the background image.

16. A computerized method of searching video information to determine when a change has occurred in an area-of-interest comprising the steps of:

classifying foreground pixels into a first type and a second type;

incorporating the foreground pixels of the first type into a background image;

recording, as a background update occurrence, when the foreground pixels of the first type were incorporated into the background in a database; and

searching the database for background update occurrences.

17. The method claim 16, further comprising a step of classifying pixels as foreground pixels or background pixels.